

Branch Name:	Civil Engineering
Semester/Year:	Semester VII / Fourth Year
Subject Title:	Infrastructure Planning and Management (Elective – III)
Subject Code:	1ET1060708
Pre-requisite:	Basic Knowledge of Building Construction and Material and Construction Management

Course Objective:

- To give an experience in the implementation of new technology concepts which are applied in field of advanced construction
- To study different methods of construction to successfully achieve the structural design with recommended specifications.
- To involve the application of scientific and technological principles of planning, analysis, design and management to construction technology.
- To study of construction equipments, and temporary works required to facilitate the construction process
- To make the students aware of the method of construction management.
- To impart knowledge about different methods of network planning.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
03	02	00	05	70	30	-	-	100

Subject Contents			
Sr. No	Topic	Total Hours	Weightage (%)
1	Infrastructure: Definitions of infrastructure, Governing Features, Historical overview of Infrastructure development in India, Infrastructure Organizations & Systems.	10	24
2	Infrastructure Planning: Typical infrastructure planning steps, Planning and appraisal of major infrastructure projects, Screening of project ideas, Life cycle analysis, Multi-criteria analysis for comparison of infrastructure alternatives, Procurement strategies, Scheduling and management of planning activities, Infrastructure Project Budgeting and Funding, Regulatory Framework, Sources of Funding.	10	24

3	Project Management in Construction: Introduction to project management processes - Initiating, Planning, Executing, Controlling, and Closing processes; Project Integration Management - Project plan development, Project plan execution, and Overall change control; Project Scope Management - Initiation, Scope planning, Scope definition, Scope verification, and Scope change control.	12	28
4	Contracts and Management of Contracts: Engineering contracts and its formulation, Definition and essentials of a contract, Indian Contract Act 1872, types of contracts and clauses for contracts, Preparation of tender documents, Issues related to tendering process, Awarding contract.	10	24

Course Outcome:

After learning the course the students should be able to:

- Understand infrastructure organizations
- Prepare infrastructure master plan
- Schedule infrastructure project activities
- Prepare project development plan
- Prepare tender documents for infrastructure project contract

Reference Books:

1. S. Goodman and M. Hastak, Infrastructure planning handbook: Planning, engineering, and economics, McGraw-Hill, New York, 2006.
2. J. Parkin and D. Sharma, Infrastructure planning, Thomas Telford, London, 1999.
3. P. Chandra, Projects: Planning, analysis, selection, financing, implementation, and review, Tata McGraw-Hill, New Delhi, 2009.
4. J. D. Finnerty, Project financing - Asset-based financial engineering, John Wiley & Sons, New York, 1996.
5. L. Squire and H. G. van der Tak, Economic analysis of projects, John Hopkins University Press, London, 1975.
6. T. Hegazy, Computer-based construction project management, Prentice Hall, New Jersey, 2002.
7. S. M. Levy, Project management in construction, 5th ed., McGraw Hill, New York, 2007.
8. PMI, A guide to the project management body of knowledge, 3rd ed., Project Management Institute, Pennsylvania, 1996.
9. M. Mawdesley, W. Askew and M. O'Reilly, Planning and controlling construction projects, Addison Wesley Longman Limited, Essex, 1997.
10. J. Kelly, S. Male and D. Graham, Value management of construction projects, Blackwell Publishing, Oxford, 2003.
11. Vasant Desai, "Project Management", Himalaya Publishing, 1st Edition, 2010
12. James C. Van Horne, John M. Wachowicz, "Fundamentals of Financial Management", PHI, 2nd Edition, 2000
13. Ronald W Hudson, "Infrastructure Management: integrating design, Construction, maintenance, rehabilitation and renovation", MGH, 1st Edition, 1997
14. "Codes of Practice and Standard Specifications" of AP PWD, CPWD, MES etc.
15. B.J. Vasavada, "Engineering Contracts and Arbitration", Jubilee Publications, 2nd Edition., 1996
16. Grig N. S., "Infrastructure Engineering and Management", Wiley-Interscience, 1988

E-Resources (If any):

<http://nptel.ac.in/>